

REMARKS

Claims 19 and 26 are currently being amended to obviate the Examiner's indefiniteness rejection. Additionally, claims 17 and 27 are currently being amended to further particularly point out and distinctly claim what Applicant regards as the inventive subject matter.

These amendments do not introduce new matter within the meaning of 35 U.S.C. §132. Accordingly, Applicant respectfully requests the amendments to be entered.

1. Rejection of Claim 19 and 26 Under 35 U.S.C. § 112, 2nd

Paragraph

The Office Action states claims 19 and 26 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Office Action states,

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation in claim 19 of 'exclusively' is not clear as to its inclusion either for the copolymer 'A)' or copolymer 'B)'.

Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the steps required to manufacture the product, whether it be an extrusion, mixing, etc..

RESPONSE

Applicant has amended claims 19 and 26 to obviate the current rejection. Basis for the amendments can be found throughout Applicant's specification, and in particular on page 3, line 6 - page 4, line 6, and page 21, lines 16-21.

Accordingly, Applicant kindly requests the Examiner to withdraw the current rejection.

2. Rejection of Claims 17-20, 22, 24, and 26-27 Under 35 U.S.C.

§102(b)

The Office Action states claims 17-20, 22, 24, and 26-27 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 5,773,516 (herein referred to as "Huffer, et al."). In particular, the Office Action states,

The reference to Huffer et al teaches the manufacture of a propylene copolymer composition having a first copolymer, 'containing from 0 to 15% by weight copolymerized C₂-C₂₀-alk-1-enes' which embraces the recited range at 1 to 80% by weight, with a second propylene copolymer, 'containing from 15 to 15% by weight copolymerized C₂-C₂₀-alk-1-enes' which embraces the recited range at 15 to 30% by weight, as recited in claim 17. Note the Abstract. The other monomer may be exclusively ethylene (claim 19). The range of inclusion of the first copolymer is taught to be '25 to 97 % by weight' and the second as '3 to 75% by weight' in the Abstract, which embraces that recited in claim 20 at 90 to 10, and 27 to 75. The number average molecular weight is given at column 6 (lines 18-23) and embraces that of claim 24 completely. The production of 'films, fibers and moldings' is shown at column 1 (lines 32-34). The reference shows a very low solubles content at Table 2 of columns 9 and 10. Further, note column 6 (lines 24-31 and 62-67). Since the compositions are essentially identical to those claimed, the compositions would inherently possess the haze value range and tensile E modulus recited in claim 18. Nothing is recited that would indicate otherwise.

Likewise, the composition would inherently possess the glass transition range recited in claim 22.

RESPONSE

Applicant respectfully traverses the rejection of claims 17-20, 22, 24, and 26-27.

For a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claims is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicant respectfully believes Hüffer, et al. fails to disclose, teach, or suggest, "A propylene copolymer composition comprising:

- A) a propylene copolymer containing from 1 to 20% by weight of olefins other than propylene and
 - B) at least one propylene copolymer containing from 10 to 30% by weight of olefins other than propylene,
- where the propylene copolymer A and the propylene copolymer B are present as separate phases and a portion of n-hexane soluble material is $\leq 2.6\%$ by weight, and the propylene copolymer composition is obtained from a process comprising a metallocene

compound."

First and foremost, Applicant respectfully notes the current Office Action states on page 5, lines 11-12,

Since the compositions are **essentially identical** to those claimed. . . . (Emphasis added).

However, Applicant respectfully contends since the Examiner concedes Hüffer, et al. merely discloses essentially identical compositions, and not the same compositions (i.e., identical), Hüffer, et al. clearly cannot anticipate the currently pending claims under 35 U.S.C. §102. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), (Emphasis added). Accordingly, since the Examiner has employed the wrong legal standard for anticipation, for this reason alone Applicant respectfully believes the current rejection should be withdrawn.

Notwithstanding, as outlined in col. 1, lines 1-11, in Hüffer, et al.

The present invention relates to a propylene polymer which comprises from 25 to 97% by weight of a propylene polymer (I) containing from 0 to 15% by weight of copolymerized C₂-C₁₀-alk-1-enes and also comprises from 3 to 75% by weight of a further propylene polymer (II) containing from 15 to 80% by weight of copolymerized C₂-C₁₀-alk-1-enes, obtainable by two-stage polymerization of propylene and C₂-C₁₀-alk-1-enes **in the presence of a Ziegler-Natta catalyst system**. . . . (Emphasis added)

However, as outlined in Applicant's specification on page 1, lines 15-22,

It is known that multiphase propylene copolymers having a

good impact toughness and a decreasing stiffness can be prepared by means of Ziegler-Natta catalyst systems in a multistage polymerization reaction. **However, the incorporation of ethylene-propylene copolymers having a high proportion of ethylene into a polymer matrix makes the multiphase propylene copolymer turbid. Poor miscibility of the flexible phase with the polymer matrix leads to a separation of the phases and thus to turbidity and to poor transparency values of the heterogeneous copolymer. Furthermore, the ethylene-propylene rubber prepared by means of conventional Ziegler-Natta catalysts also has a very inhomogeneous composition.** (Emphasis added)

Additionally, on page 2, lines 1-18 of Applicant's specification,

It is an object of the present invention to overcome the above-described disadvantages of the prior art and to provide propylene copolymer compositions which have a combination of low stiffness and at the same time a good transparency. Furthermore, they should have a low proportion of n-hexane-soluble material, a high impact toughness, in particular at low temperatures, good stress whitening behavior and a shrinkage behavior corresponding to propylene polymers and also a homogeneous comonomer distribution and good organoleptics.

We have found that this object is achieved by propylene copolymer compositions comprising

- A) a propylene copolymer containing from 1 to 20% by weight of olefins other than propylene and
- B) at least one propylene copolymer containing from 5 to 98% by weight of olefins other than propylene,

where the propylene copolymer composition is obtainable by means of a two-stage or multistage polymerization using a catalyst system based on metallocene compounds which is used in both stages.

Moreover, on page 7, lines 35-39 of Applicant's specification,

The composition of the propylene copolymers B present in the propylene copolymer compositions of the present

invention is preferably uniform. **This distinguishes them from conventional heterogeneous propylene copolymers which are polymerized using Ziegler-Natta catalysts, since the use of Ziegler-Natta catalysts results in blockwise incorporation of the comonomer into the propylene copolymer even at low comonomer concentrations, regardless of the polymerization process.** For the purposes of the present invention, the term 'incorporated blockwise' indicates that two or more comonomer units follow one another directly. The uniform incorporation of the propylene copolymers B also results in the propylene copolymers A and B being more compatible with one another.

Accordingly, Applicant respectfully believes the current application solves the turbidity and poor transparency problems of propylene polymers obtained by using Ziegler-Natta catalyst systems, such as those disclosed in Hüffer, et al.

In light of the above, claims 17-30 are therefore believed to be patentable over Hüffer, et al. Accordingly, reconsideration and withdrawal of the rejection is requested.

3. Rejection of Claims 17-20, and 24-27 Under 35 U.S.C. §103(a)

The Office Action states claims 17-20, and 24-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,511,755 (herein referred to as "Mochizuki, et al."). In particular, the Office Action states,

The patent to Mochizuki et al teaches the production of a propylene copolymer blend that may comprise a first copolymer having from 1.5 to 10% by weight comonomer, which may be ethylene, with a second copolymer embracing the olefin content, which may be ethylene, at 20 to 30 % by weight, as recited in claims 17 and 19. Note column 4 (line 51) to column 5 (line 25). That passage also shows manipulation of haze due to the presence of propylene, as

recited in claim 18. Further, note column 12 (lines 37-45) in that regard, and the data in Tables 1 and 2. The range of inclusion for the two copolymers is shown at Table 7 (claim 20) to embrace those claimed herein. The manipulation of the molecular weight is shown at column 9 (lines 14-16). The process of claim 25 is shown at column 9 (lines 29 et seq.). The production of films is shown throughout the patent (claims 26 and 27). Although the reference is silent as regards the extractables, a skilled artisan would know to manipulate these values for desired end-use characteristics. As such, a skilled artisan would have a high level of expectation of success following the teachings of the reference to achieve the claimed inventions.

RESPONSE

Applicant respectfully traverses the rejection of claims 17-20, and 24-27.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP

\$2142.

However, as with Hüffer, et al., Applicant respectfully believes Mochizuki, et al. fails to disclose, teach, or suggest, "A propylene copolymer composition comprising:

- A) a propylene copolymer containing from 1 to 20% by weight of olefins other than propylene and
- B) at least one propylene copolymer containing from 10 to 30% by weight of olefins other than propylene,

where the propylene copolymer A and the propylene copolymer B are present as separate phases and a portion of n-hexane soluble material is $\leq 2.6\%$ by weight, and the propylene copolymer composition is obtained from a process comprising a metallocene compound."

In particular, as outlined in col. 7, lines 10-43, in Mochizuki, et al.

The constituting characteristic of the method for the manufacture of the propylene composition used in the present invention is that a crystalline polypropylene is manufactured as the first stage in a gas phase in the presence of a stereoregular **catalyst comprising a solid catalyst component (A) containing titanium of a big particle size**, an organoaluminum compound (B) and an organosilicon compound (C) (the first polymerization step) and, as the second stage, a copolymer of propylene with α -olefin is continuously manufactured (the second polymerization step). With regard to the titanium-containing solid catalyst component (A) in the said manufacturing method, any known one may be used so far as it is a component **where a titanium compound is carried on an inorganic carrier such as magnesium compound, silica compound or alumina or on an organic carrier such as polystyrene or it is a component where such a carrier is, if necessary, made to react with an electron-donating compound such as ethers (e.g., 2-methyl-2-isobutyl-1,3-**

dimethoxypropane) and esters (e.g., di-n-butyl phthalate and diisobutyl phthalate).

Thus, a titanium-containing solid catalyst component prepared by spraying an alcoholic solution of a magnesium compound, partially drying the said solid component and then by treating the said partially dried solid component with an electron-donating compound such as titanium halide or di-n-butyl phthalate (Japanese Patent Laid-Open No. 119,003/1991) and a titanium-containing solid catalyst component prepared by dissolving a magnesium compound in tetrahydrofuran/alcohol/electron donor and by treating a magnesium simple substance separated by a sole TiCl_4 or a combination of it with the said electron donor with titanium halide and the above-mentioned electron-donating compound (Japanese Patent Laid-Open No. 103,604/1992) may be exemplified. (Emphasis added)

However, as outlined *supra*, on page 1, lines 15-22 in Applicant's specification,

It is known that multiphase propylene copolymers having a good impact toughness and a decreasing stiffness can be prepared by means of Ziegler-Natta catalyst systems in a multistage polymerization reaction. However, the incorporation of ethylene-propylene copolymers having a high proportion of ethylene into a polymer matrix makes the multiphase propylene copolymer turbid. Poor miscibility of the flexible phase with the polymer matrix leads to a separation of the phases and thus to turbidity and to poor transparency values of the heterogeneous copolymer. Furthermore, the ethylene-propylene rubber prepared by means of conventional Ziegler-Natta catalysts also has a very inhomogeneous composition. (Emphasis added)

Additionally, on page 2, lines 1-18 of Applicant's specification,

It is an object of the present invention to overcome the above-described disadvantages of the prior art and to provide propylene copolymer compositions which have a combination of low stiffness and at the same time a good transparency. Furthermore, they should have a low

proportion of n-hexane-soluble material, a high impact toughness, in particular at low temperatures, good stress whitening behavior and a shrinkage behavior corresponding to propylene polymers and also a homogeneous comonomer distribution and good organoleptics.

We have found that this object is achieved by propylene copolymer compositions comprising

A) a propylene copolymer containing from 1 to 20% by weight of olefins other than propylene and

B) at least one propylene copolymer containing from 5 to 98% by weight of olefins other than propylene,

where the propylene copolymer composition is obtainable by means of a two-stage or multistage polymerization using a catalyst system based on metallocene compounds which is used in both stages.

Moreover, on page 7, lines 35-39 of Applicant's specification,

The composition of the propylene copolymers B present in the propylene copolymer compositions of the present invention is preferably uniform. **This distinguishes them from conventional heterogeneous propylene copolymers which are polymerized using Ziegler-Natta catalysts, since the use of Ziegler-Natta catalysts results in blockwise incorporation of the comonomer into the propylene copolymer even at low comonomer concentrations, regardless of the polymerization process.** For the purposes of the present invention, the term 'incorporated blockwise' indicates that two or more comonomer units follow one another directly. The uniform incorporation of the propylene copolymers B also results in the propylene copolymers A and B being more compatible with one another.

Accordingly, as with Hüffer, et al., Applicant respectfully believes Mochizuki, et al. relates to polypropylene compositions obtained using Ziegler-Natta catalyst systems. As such, Applicant respectfully believes the current application solves the turbidity and poor transparency problems of polypropylene polymers obtained by

using Ziegler-Natta catalyst systems, such as those disclosed in Mochizuki, et al.

In light of the above, claims 17-30 are therefore believed to be patentable over Mochizuki, et al. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

4. Rejection of Claims 17, 19-21, and 23-27 Under 35 U.S.C.

§103(a)

The Office Action states claims 17, 19-21, and 23-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,586,528 (herein referred to as "Delaite, et al."). In particular, the Office Action states,

The patent to Delaite et al teaches the manufacture of a propylene copolymer blend that may comprise a first copolymer, present in the amounts of 55 to 74 parts, having 1% by weight ethylene, with a second propylene copolymer, present in the amounts of 26 to 45 parts, having an ethylene content overlapping that claimed at 10 to 15% by weight, as recited in claims 17, 19 and 20. The reference teaches the inclusion of nucleating agents at column 3 (lines 53-59), as in claim 21. The reference teaches the production of articles and films, as in claims 26 and 27. Note column 1 (lines 16-21). The process, as recited in claim 25, is shown at column 5 (lines 10 et seq.). Further, note column 4 (lines 65-67) and column 5 (lines 43-49) which teaches manipulation of the molecular weight and the molecular weight distribution, as in claims 23 and 24. Further, note the Examples. Although the reference is silent as regards the extractables, a skilled artisan would know to manipulate these values for desired end-use characteristics. As such, a skilled artisan would have a high level of expectation of success following the teachings of the reference to achieve the claimed inventions.

RESPONSE

Applicant respectfully traverses the rejection of claims 17, 19-21, and 23-27.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

However, as with Hüffer, et al. and Mochizuki, et al., Applicant respectfully believes Delaite, et al. fails to disclose, teach, or suggest, "A propylene copolymer composition comprising:

- A) a propylene copolymer containing from 1 to 20% by weight of olefins other than propylene and
- B) at least one propylene copolymer containing from 10 to 30% by weight of olefins other than propylene,

where the propylene copolymer A and the propylene copolymer B are present as separate phases and a portion of n-hexane soluble material is $\leq 2.6\%$ by weight, and the propylene copolymer composition is obtained from a process comprising a metallocene compound."

In particular, as outlined in col. 4, lines 34-43, in Delaite, et al.,

Polymers (A) and (B) are preferably obtained by polymerization of propylene and, as the case may be, of ethylene by means of catalytic systems comprising a solid based on titanium trichloride, an alkylaluminum and optionally an electron donor. Particularly preferable catalytic systems of this type are described in European Patent Applications 0261727 and 0334411 and in U.S. Pat. No. 4,210,729 and 5,204,305 (Solvay Polyolefins Europe, Belgium), the entire contents of each of which are hereby incorporated by reference.

However, as outlined *supra*, on page 1, lines 15-22 in Applicant's specification,

It is known that multiphase propylene copolymers having a good impact toughness and a decreasing stiffness can be prepared by means of Ziegler-Natta catalyst systems in a multistage polymerization reaction. **However, the incorporation of ethylene-propylene copolymers having a high proportion of ethylene into a polymer matrix makes the multiphase propylene copolymer turbid. Poor miscibility of the flexible phase with the polymer matrix leads to a separation of the phases and thus to turbidity and to poor transparency values of the heterogeneous copolymer. Furthermore, the ethylene-propylene rubber prepared by means of conventional Ziegler-Natta catalysts also has a very inhomogeneous composition.** (Emphasis added)

Additionally, on page 2, lines 1-18 of Applicant's specification,

It is an object of the present invention to overcome the above-described disadvantages of the prior art and to provide propylene copolymer compositions which have a combination of low stiffness and at the same time a good transparency. Furthermore, they should have a low proportion of n-hexane-soluble material, a high impact toughness, in particular at low temperatures, good stress whitening behavior and a shrinkage behavior corresponding to propylene polymers and also a homogeneous comonomer distribution and good organoleptics.

We have found that this object is achieved by propylene copolymer compositions comprising

A) a propylene copolymer containing from 1 to 20% by weight of olefins other than propylene and

B) at least one propylene copolymer containing from 5 to 98% by weight of olefins other than propylene,

where the propylene copolymer composition is obtainable by means of a two-stage or multistage polymerization using a catalyst system based on metallocene compounds which is used in both stages.

Moreover, on page 7, lines 35-39 of Applicant's specification,

The composition of the propylene copolymers B present in the propylene copolymer compositions of the present invention is preferably uniform. **This distinguishes them from conventional heterogeneous propylene copolymers which are polymerized using Ziegler-Natta catalysts, since the use of Ziegler-Natta catalysts results in blockwise incorporation of the comonomer into the propylene copolymer even at low comonomer concentrations, regardless of the polymerization process.** For the purposes of the present invention, the term 'incorporated blockwise' indicates that two or more comonomer units follow one another directly. The uniform incorporation of the propylene copolymers B also results in the propylene copolymers A and B being more compatible with one another.

Accordingly, as with Hüffer, et al. and Mochizuki, et al., Applicant respectfully believes Delaite, et al. relates to propylene

compositions obtained using Ziegler-Natta catalyst systems. As such, Applicant respectfully believes the current application solves the turbidity and poor transparency problems of polypropylene polymers obtained by using Ziegler-Natta catalyst systems, such as those disclosed in Delaite, et al.

In light of the above, claims 17-30 are therefore believed to be patentable over Delaite, et al. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

5. DOUBLE PATENTING REJECTION

Applicant kindly requests the Examiner to hold the provisional double patenting rejection to co-pending Application Serial No. 10/517,580 in abeyance since neither application has issued as a patent.

CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the references of record. The Examiner is therefore respectfully requested to reconsider and withdraw all rejections and allow all pending claims 17-30. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

The Examiner is welcomed to telephone the undersigned practitioner if he has any questions or comments.

Serial No. 10/517,588

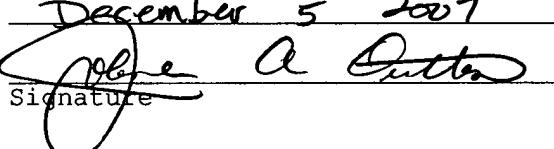
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